# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re Patent Application of | ) |
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| Jacob McGuire | ) Group Art Unit: 2142 |
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| Application No.: 09/843,816 | ) Examiner: KAMINI S SHAH |
| | ) |
| Filed: April 30, 2001 | ) Appeal No.: |
| | ) |
| For: INTERFACE FOR AUTOMATED | ) |
| DEPLOYMENT AND | ) |
| MANAGEMENT OF NETWORK | ) |
| DEVICES | ) |
| | ) |

## APPEAL BRIEF

**Mail Stop APPEAL BRIEF - PATENTS**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is from the decision of the Primary Examiner dated June 15, 2005 finally rejecting claims 1-23, which are reproduced as the Claims Appendix of this brief.

☐ A check covering the ☐ $250.00 (2402) ☐ $500.00 (1402) Government fee is filed herewith.

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The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

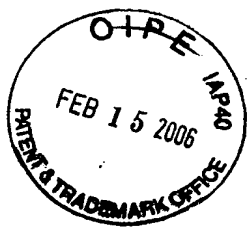02/16/2006 JADD01 00000039 09843816
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## Table of Contents

I.    Real Party in Interest

The subject application is assigned to Opsware, Inc., the successor in interest
to Loudcloud, Inc.

II.    Related Appeals and Interferences

There are no other prior or pending appeals, interferences, or judicial
proceedings which may be related to, directly affect or be directly affected by, or
have a bearing on the Board's decision in this appeal.

III.    Status of Claims

The application contains claims 1-23, all of which are currently pending and
stand finally rejected.  This appeal is directed to claims 1-23.

IV.    Status of Amendments

There were no amendments filed subsequent to the final Office Action.

V.    Summary of Claimed Subject Matter

The claimed invention is directed the deployment and management of devices
that control the transmission of data over a network, such as switches, routers,
firewalls and load balancers.  The automated deployment and configuration of these
type of devices present issues that differ from the deployment and management of
other types of network computing systems, such as servers.  A server is designed to
be able to execute non-native code, such as an agent.  In contrast, devices of the
type described above, namely switches, routers, firewalls and load balancers, run on
proprietary operating systems that do not facilitate the ability to run agents, or other
non-native code, on them.  Rather, each of these types of devices must be
configured by means of an associated communication interface that is used to send
specific commands to it.  As a further complicating factor, each of these different

types of devices may utilize a different communication interface. Even if they use the same interface, due to the different functions that they perform, different sets of commands are used to configure them. (Paragraphs 0001, 0004-0006 and 00030).

The claimed invention provides a universal interface that enables users to manage each of the different types of network devices that have these differing requirements. An example of the interface is depicted in Figure 4 of the application. The interface is comprised of two principal features, namely a routine library 32 and a set of plug-in modules 36. The library 32 has an associated set of commands 34a-34n that are generic to all of the network devices to be managed via the interface. An exemplary list of such commands is presented on pages 9-10 of the specification. A plug-in module 36a-36n is provided for each type of network device to be managed. In the example of Figure 4, a first plug-in module 36a is provided for a pair of switches 1 and 2. A second plug-in module 36b is associated with another switch 3, which may be from a different vendor and therefore have a different set of commands. The other plug-in modules 36c-36n are provided for other types of devices to be managed via the interface. (Paragraphs 0031-0032).

Each of the plug-in modules 36 functions to convert commands from the generic set of commands 34 associated with the library 32 into commands that are specific to the devices with which they correspond. In operation, the user can invoke one of the generic commands for a particular device. In response to receipt of this command, the library 32 determines which plug-in module is associated with that device, and presents the command to the module. The module functions to translate this command into the equivalent command for that device which achieves the desired operation. The device-specific command is then transmitted to the remote device, using the appropriate protocol for communication with that device. When a response is received from the device, the plug-in module transforms the response back into a generic format, and presents it to the library 32. (Paragraphs 0033-0034).

VI.  Grounds of Rejection to be Reviewed on Appeal

The final Office Action presents a single ground of rejection for review on this appeal, namely whether claims 1-23 are unpatentable under 35 U.S.C. § 103, in view of the Anand et al patent (US 6,748,436).

VII.  Argument

The Anand patent, on the basis of which all claims stand rejected, pertains to the management of servers in a heterogeneous network.  Referring to Figure 1A, the patent discloses an administrator console 102 that communicates with a configuration server 118.  A user employs the administrator console 102 to send generic commands to the configuration server 118.  Depending upon the command, the configuration server 118 directs it to a pre-assigned deployment server 150A, 150B or 150C.  Within the deployment server, the generic command is converted to a specific-platform command that this executable by that deployment server. (Column 3, lines 4-15).

Since the devices being managed in the system of the Anand patent are servers, that system is not faced with the same challenges as those addressed by the claimed invention, namely the management of network devices such as switches, firewalls, routers and load balancers.  As discussed in section V of this Brief, a server is capable of executing non-native code.  Thus, in the system of the Anand patent, generic commands are transmitted to the individual deployment servers 150, and converted into platform-specific commands *within* those servers.  In contrast, devices such as switches, firewalls, routers and load balancers are not capable of performing such transformations internally.  Rather, they are only capable of responding to device-specific commands that are received from external sources. Because of this difference, the uniform interface of the claimed invention is structured differently from the management system of the Anand patent.

Claims 1 and 12

Claim 1 recites a uniform interface for configuring and managing a plurality of types of network devices. As specifically recited in dependent claim 23, these network devices are switches, firewalls, routers or load balancers. The interface of claim 1 comprises two elements, namely a library containing generic commands that can be applied to the network devices, and a plurality of plug-in modules that can register with the library. Each of the plug-in modules operates to convert at least some of the generic commands of the library into device-specific commands, and to transmit these device-specific commands to remote individual devices of a type that are associated with the module.

In rejecting claim 1, the final Office Action refers to the library 172B, illustrated in Figure 1A, contained within the deployment server 150B, as corresponding to the claimed library. In connection with the claimed plug-in modules, the Office Action refers to the DLL modules that map and correlate a generic command to a specific platform command. These DLL modules are the *same* as the library 172B. At column 6, lines 32-35, the Anand patent states, "Furthermore, deployment servers 150A, 150B and 150C are respectively coupled to library 172A, 172B, and 172C (*such as dynamic link libraries (DLLs))*...(emphasis added).) In other words, the DLLs constitute the library 172B.

In light of this disclosure, a person of ordinary skill in the art would not interpret the library 172B, which comprises the DLLs, to be *both* the claimed library containing generic commands *and* a plurality of plug-in modules. Claim 1 explicitly recites that the plurality of plug-in modules "can register with said library." As such, the library cannot be the same entity as the plug-in modules, since the plug-in modules do not register with themselves. The library must be separate and distinct from the plug-in modules that register with it. Consequently, the interpretation of the Anand patent that is set forth in the rejection of claim 1, namely that the dynamic link libraries (DLLs) are both the library and the plug-in modules, is not consistent with the recitations of the claim.

As a further distinction, claim 1 recites that each plug-in module converts at least some of the generic commands into device-specific commands, and *transmits* these device specific commands to *remote* individual devices. Thus, the interface that contains the library and the plug-in modules is remote from the devices that are being managed. In contrast, the Anand patent discloses that *each* deployment server 150 has a respective library 172 associated with it. It does not disclose that these libraries are remote from the server, and function to transmit device specific command to the servers.

Thus, while the Anand patent generally discloses a system in which generic commands are transformed into specific commands to manage devices in a heterogeneous network, it does not disclose the particular arrangement recited in claim 1. Specifically, it does not disclose a uniform interface that comprises a library and a plurality of plug-in modules that register with the library, and that convert generic commands from the library into device-specific commands that are then transmitted to remote individual devices. The dynamic link libraries that are associated with each of the individual deployment servers are not the same thing.

Accordingly, the final Office Action fails to establish a prima facie case of obviousness for the subject matter of claim 1. Specifically, it has not shown that the Anand patent teaches or suggests all the claim language, which is one of the three criteria for a prima facie case of obviousness (M.P.E.P. §§2143 and 2143.03). For the same reasons, the Office Action fails to present a supportable rejection of claim 12. This claim recites a method for configuring and managing a plurality of different types of network devices which includes the steps, among others, of "registering a plurality of plug-in modules with said library," "receiving commands for a given device that is remote from said module;" and "transmitting said device-specific commands from said module to said given device."

Claims 2-11 and 13-23

The final Office Action does not set forth a supportable rejection of claims 2-11 and 13-23. Rather, it summarily dismisses all the claims with the conclusory

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statement that they "are obvious variations of well known features of updating, converting or translating commands or configuration of the like, e.g., like variations of Anand et al teaching" (final Office Action, page 3). As noted in the preceding section of this Brief, M.P.E.P. §2143 states that, to establish a prima facie case of obviousness, certain criteria must be met. One of these criteria is that the prior art reference "must teach or suggest all the claim imitations." The final Office Action essentially admits that the subject matter of claims 2-11 and 13-23 is not taught by the Anand patent, since it characterizes the subject matter of these claims as "variations of Anand et al teachings." However, it fails to cite any *other* reference that discloses these variations. Thus, the Office Action fails to meet this required criterion.

Another of the required criteria is that there must be a suggestion or motivation to modify the reference or combine reference teachings. Even if it could be shown that the features recited in claims 2-11 and 13-23 are well known by themselves, by citing supporting references, there is no showing that it would be obvious to modify the teachings of the Anand patent to incorporate such features. For example, claims 22 and 23 recite that the network devices that are being configured and managed "are selected from the group consisting of switches, firewalls, routers and load balancers." As discussed previously, since these types of devices are not capable of executing non-native code, they cannot be managed with an arrangement of the type disclosed in the Anand patent, which requires the deployment servers to be able to process generic commands. The Office Action does not provide any hint of the manner in which the Anand system could be modified to manage the types of devices recited in these claims.

Distinguishing features recited in other dependent claims are likewise not disclosed in the Anand patent, nor addressed in the Office Action. For example, claim 2 recites that the plug-in modules transmit each of the device-specific commands in accordance with a transmission protocol that is specific to the individual devices. Claim 3 recites that one of these transmission protocols comprises Telnet. Since the Anand patent only discloses that generic commands

are sent to the deployment servers, it does not address the need to communicate with devices by means of protocols that are specific to those devices. In particular, it does pertain to the use of Telnet.

Claims 4-9 recite various specific commands that are associated with the network devices being managed. Again, the Office Action fails to identify where any of these commands are suggested by the Anand patent, or any other prior art.

Claim 10 recites that the library is responsive to the receipt of a command for a given device to determine the module that corresponds to that device, and provide the received command to the module. Claim 12 also recites this subject matter. According to the interpretation set forth in the Office Action, the library and the module are implemented in one and the same entity, 172B. That entity is already associated with a specific device. In such a case, when the "library" receives a generic command, there is no need to make a determination of the type recited in claims 10 and 12.

For similar reasons, the rejection of claims 13-21 is not supportable.

Conclusion

From the foregoing, it can be seen that the final Office Action does not meet the criteria for establishing a prima facie case of obviousness. At a minimum, it fails to show where the Anand patent teaches or suggests all of the claim limitations. Furthermore, it does not provide any support in the prior art for the rejection of claims 2-11 and 13-23.

The rejection is not properly found in the statute, and should be reversed.

VIII. Claims Appendix

See attached Claims Appendix for a copy of the claims involved in the appeal.

IX.    Evidence Appendix

There is no Evidence Appendix for this Brief.


X.    Related Proceedings Appendix

There is no Related Proceedings Appendix for this Brief.


Respectfully submitted,

Buchanan Ingersoll PC


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## VIII. CLAIMS APPENDIX

### The Appealed Claims

1.      A uniform interface for configuring and managing a plurality of different types of network devices, comprising:

a library containing generic commands that can be applied to said network devices; and

a plurality of plug-in modules that can register with said library, each of said modules operating to convert at least some of said generic commands into device-specific commands and transmit said device-specific commands to remote individual devices of a type that are associated with the module.

2.      The system of claim 1 wherein said plug-in modules transmit each of said commands in accordance with a transmission protocol specific to the individual devices, respectively.

3.      The system of claim 2 wherein one of said transmission protocols comprises Telnet.

4.      The system of claim 1 wherein one of said generic commands establishes a connection to a network device through which configuration commands can be sent and information can be retrieved.

5.      The system of claim 1 wherein one of said generic commands retrieves the current configuration of a network device by executing appropriate commands on the device.

6.      The system of claim 1 wherein one of said generic commands post-processes configuration information retrieved from a device to render said information suitable for storage and saves it to a local file system.

7.     The system of claim 1 wherein one of said generic commands puts a device into a mode where it can accept configuration commands through an established connection at an enabled level.

8.     The system of claim 1 wherein one of said generic commands gives a device a complete configuration based on information from a stored configuration file.

9.     The system of claim 1 wherein one of said generic commands puts a device into its most privileged level through an established connection to the device.

10.     The system of claim 1 wherein said library is responsive to the receipt of a command for a given device to determine the module that corresponds to said device and provide the received command to said module.

11.     The system of claim 1 wherein said modules convert responses received from the individual devices with which they are associated into a generic format for presentation to said library.

12.     A method for configuring and managing a plurality of different types of network devices, comprising:
     establishing a library of generic commands that can be applied to said network devices;
     registering a plurality of plug-in modules with said library, each of said modules operating to convert at least some of said generic commands into device-specific commands;
     receiving commands for a given device that is remote from said modules;
     determining the module that corresponds to said device and forwarding the received commands to said module; and
     transmitting said device-specific commands from said module to said given device.

13.    The method of claim 12 wherein said plug-in modules transmit each of said commands in accordance with a transmission protocol specific to the individual devices, respectively.

14.    The method of claim 13 wherein one of said transmission protocols comprises Telnet.

15.    The system of claim 12 wherein one of said generic commands establishes a connection to a network device through which configuration commands can be sent and information can be retrieved.

16.    The system of claim 12 wherein one of said generic commands retrieves the current configuration of a network device by executing appropriate commands on the device.

17.    The method of claim 12 wherein one of said generic commands post-processes configuration information retrieved from a device to render said information suitable for storage and saves it to a local file system.

18.    The method of claim 12 wherein one of said generic commands puts a device into a mode where it can accept configuration commands through an established connection at an enabled level.

19.    The method of claim 12 wherein one of said generic commands gives a device a complete configuration based on information from a stored configuration file.

20.    The method of claim 12 wherein one of said generic commands puts a device into its most privileged level through an established connection to the device.

21.     The method of claim 12 wherein said modules convert responses received from the individual devices with which they are associated into a generic format for presentation to said library.

22.     The method of claim 12 wherein said network devices are selected from the group consisting of switches, firewalls, routers and load balancers.

23.     The system of claim 1 wherein said network devices are selected from the group consisting of switches, firewalls, routers and load balancers.